

**REMARKS**

**Status of the claims:**

Claims 36 – 47, 50 – 55, 58, 60 – 68, 88 – 93, and 131 – 139 are pending.

Claims 1 – 35, 48, 49, 56, 57, 59, 69 – 87, 94 – 129, and 130 are cancelled.

Claims 63 and 132 – 138 are rejected.

Claims 36 – 47, 50 – 55, 58, 60 – 62, 64 – 68, 88 – 93 and 131 are allowed.

Claims 63 and 132 – 138 are currently amended.

Claim 139 is a new claim.

**Amendments to the claims:**

No new matter has been introduced by way of the claim amendments.

Allowed claim 39 is presently amended in order to establish proper antecedent support.

Claim 63 is amended to recite a product by process further comprising dispersing the derivatized carbon nanotubes in a polymer matrix and heating the derivatized carbon nanotubes. The heating step removes at least a portion of the aryl moieties from the derivatized carbon nanotubes. Support for these amendments may be found on at least page 20, lines 1 – 2; page 20, lines 38 – 39 through page 21, lines 1 – 2 and Figure 8.

Claims 132 – 138 are each amended to receive proper antecedent support from claim 63, as amended.

**New claims:**

Claim 139 is a new claim. The invention of claim 139 was previously presented in multiple-dependent form in claim 63. As written, new claim 139 includes improved antecedent

support from independent claim 38 than did the original claim 63. Support for new claim 139 may be found on at least page 12, lines 25 – 28 through page 13, lines 1 – 5; page 16, lines 9 – 15 and 35 – 38; and Figure 8.

#### **I. Rejection of Claims 63 and 132 – 138**

Claims 63 and 132 – 138 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, obvious under 35 U.S.C. § 103(a) over *Chen et al.* (hereinafter, *Chen*). Applicants respectfully traverse the Examiner's rejection of these claims.

Applicants presume that the Examiner's citation of *Chen* refers to Y. Chen *et al.*, "Chemical attachment of organic functional groups to single-walled carbon nanotube material," *J. Mater. Res.* 1998;13, pp. 2423 – 2431 referenced in Applicants' Information Disclosure Statement. The Examiner asserts that *Chen* teaches single-wall carbon nanotubes. Further, the Examiner asserts that single-wall carbon nanotubes result when aryl substituents are added to single-wall carbon nanotubes and then removed.

In contrast, Applicants' amended claim 63 recites a product by process, where the process further comprises dispersing derivatized carbon nanotubes in a polymer matrix and heating the derivatized carbon nanotubes to remove at least a portion of the aryl moieties from the derivatized carbon nanotubes. Applicants assert that *Chen* does not teach, either expressly or inherently, or suggest dispersed derivatized carbon nanotubes in a polymer matrix. Further, *Chen* does not teach, either expressly or inherently, or suggest carbon nanotubes that are at least partially defunctionalized by heating.

Since *Chen* does not teach all of the limitations of claim 63 either expressly or inherently, Applicants assert patentability of this claim over *Chen* under 35 U.S.C. § 102(b). An anticipation rejection under 35 U.S.C. § 102 requires each claim element to be present in the cited art either expressly or inherently. M.P.E.P. § 2131, *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Likewise, since *Chen* does not teach or suggest all of the limitations of claim 63, Applicants assert patentability of this claim over *Chen* under 35 U.S.C. § 103(a). Rejections made under 35 U.S.C. § 103(a) require

that all claim limitations must be taught or suggested by the prior art to establish obviousness. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Therefore, Applicants assert that claim 63, as presently amended, is patentable over *Chen*. Claims 132 – 138 depend either directly or indirectly from independent claim 63 and are patentable for at least the same reasons. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Therefore, withdrawal of the Examiner's rejection of claims 63 and 132 – 138 under 35 U.S.C § 102(b) or in the alternative 35 U.S.C § 103(a) in view of the foregoing remarks and amendments is respectfully requested.

With regard to new claim 139, *Chen* does not teach, either expressly or inherently, or suggest an assembly or carbon nanotubes. In particular, *Chen* does not teach, either expressly or inherently, or suggest an assembly where the carbon nanotubes are at least partially defunctionalized. Since *Chen* does not teach, either expressly or inherently, or suggest all of the limitations of claim 139, Applicants also assert patentability of this claim under 35 U.S.C § 102(b) and 35 U.S.C § 103(a) over *Chen*.

### CONCLUSION

Applicants respectfully submit that claims 36 – 47, 50 – 55, 58, 60 – 68, 88 – 93, and 131 – 139, as they presently stand amended, are now patentably distinct over the cited references and are in a condition for allowance based on the remarks and amendments presented hereinabove.

If additional fees are due and are not included, the Director is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 23-2426 of Winstead PC (referencing matter 11321-P022WUD1). If the Examiner has any questions or comments concerning this paper or the present application in general, the Examiner is invited to call the undersigned at (713) 650-2782.

Respectfully submitted,

WINSTEAD PC

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